A6.7 'Air Quality Neutral'

A6.7.1 The GLA's SPG on Sustainable Design and Construction (GLA, 2014a), and its accompanying Air Quality Neutral methodology report (AQC, 2014), provide an approach to assessing whether a development is air quality neutral. The approach is to compare the expected emissions from the building energy use and the car use associated with the proposed development against defined emissions benchmarks for buildings and transport in London.

A6.7.2 The benchmarks for heating and energy plant (termed 'Building Emissions Benchmarks' or 'BEBs') are set out in Table A6.7.1, while the 'Transport Emissions Benchmarks' ('TEBs') are set out in Table A6.7.2. In order to assess against the TEBs, it is necessary to combine the expected trip generation from the development with estimates of average trip length and average emission per vehicle. So as to ensure a consistent methodology, the report which accompanies the SPG (AQC, 2014) recommends that the information in Table A6.7.3 and Table A6.7.4 (upon which the TEBs are based) is used. Similarly, the information in Table A6.7.5 may be used if site-specific information are not available (AQC, 2014). The average trip rates, for use where TEBs are not available, are set out in Table A6.7.6.

Table A6.7.1: Building Emissions Benchmarks (g/m^2 of Gross Internal Floor Area)

Land Use Class	NOx	PM_{10}
Class A1	22.6	1.29
Class A3 - A5	75.2	4.32
Class A2 and Class B1	30.8	1.77
Class B2 - B7	36.6	2.95
Class B8	23.6	1.90
Class C1	70.9	4.07
Class C2	68.5	5.97
Class C3	26.2	2.28
D1 (a)	43.0	2.47
D1 (b)	75.0	4.30
Class D1 (c -h)	31.0	1.78
Class D2 (a-d)	90.3	5.18
Class D2 (e)	284	16.3

Table A6.7.2: Transport Emissions Benchmarks

Land use	CAZ [a]	Inner [b]	Outer [b]
NOx (g/m^2/annum)			
Retail (A1)	169	219	249
Office (B1)	1.27	11.4	68.5
NOx (g/dwelling/annum)			
Residential (C3)	234	558	1553
PM_{10} (g/m^2/annum)			
Retail (A1)	29.3	39.3	42.9
Office (B1)	0.22	2.05	11.8
PM_{10} (g/dwelling/annum)			
Residential (C3,C4)	40.7	100	267

[a] Central Activity Zone

[b] Inner London and Outer London (as defined in the LAEI) (GLA, 2013)

Table A6.7.3: Average Distance Travelled by Car per Trip

Land use	Distance (km)		
	CAZ	Inner	Outer
Retail (A1)	9.3	5.9	5.4
Office (B1)	3.0	7.7	10.8
Residential (C3)	4.3	3.7	11.4

Table A6.7.4: Average Road Traffic Emission Factors in London in 2010 (AQC, 2014)

Pollutant	g/vehicle-km		
	CAZ	Inner	Outer
NOx	0.4224	0.370	0.353
PM_{10}	0.0733	0.0665	0.0606

Table A6.7.5: Average Emissions from Heating and Cooling Buildings in London in 2010 (AQC, 2014)

	Gas (kg/kWh)		Oil (kg/kWh)	
	NOx	PM_{10}	NOx	PM_{10}
Domestic	0.0000785	0.00000181	0.000369	0.000080
Industrial/Commercial	0.000194	0.00000314	0.000369	0.000080

Table A6.7.6: Average Number of Trips per Annum for Different Development Categories

Land use	Number of Trips (trips/m^2/annum)		
	CAZ [a]	Inner [b]	Outer [b]
A3	153	137	170
A4	2.0	8.0	-
A5	-	32.4	590
B2	-	15.6	18.3
B8	-	5.5	6.5
C1	1.9	5.0	6.9
C2	-	3.8	19.5
D1	0.07	65.1	46.1
D2	5.0	22.5	49.0

[a] Central Activity Zone

[b] Inner London and Outer London (as defined in the London Atmospheric Emissions Inventory) (GLA, 2013)